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Tech Tips

THREE BAGS FOR HELICOPTER OPERATIONS: Ping-Pong Ball, Mop-Up Kit, & Tether Line

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Three "bags" have been developed and deployed by helicopter operations specialists: A storage bag for "Ping-Pong balls" used with the Aerial Ignition Device (AID), plus a mop-up kit bag and a tether line bag that are for use with pyramid tanks. Each of the bags can increase safety and effectiveness of operation by helping organize equipment; each is inexpensive; and each is relatively simple.

There are no current plans to make any of these bags standard or required, nor are there plans to have them produced in quantity or stocked in any cache. However, if you believe that any of them could enhance your operation, contact the respective specialist listed in this Tech Tips for further technical, operational, or ordering information.

PING-PONG BALL BAG Background

"Ping-Pong balls," used in the AID, are a safe and effective aerial incendiary device. However, filling the hopper that supplies the balls to the machine in flight is sometimes a trying experience. A safe and convenient bag for storing and dispensing the balls in flight has been developed by Pete Kubiak, Forestry Technician on the National Forests in Florida (Apalachicola). Originally, the balls were stored and dispensed from either cardboard boxes or plastic bags. The cardboard boxes were bulky and difficult to lift; the plastic bags were difficult to manipulate—many balls were spilled. Also, because the empty bags and boxes were so light, they could be a hazard; flying around inside the helicopter or even fouling the tail rotor.

Construction

The Ping-Pong ball bag in use today is made of a durable acrylic fabric. The fabric is relatively nonporous, to minimize absorption of any ethynol glycol that might come in contact with the bag. The bag can be washed to prevent any buildup of chemicals, which could possibly result in an onboard fire. Outside dimensions of the bag (fig. 1) are approximately 3 by 1.5 feet. The bag has a carrying capacity of 2,000 balls, which weigh 30 pounds. The cloth handle on top of the bag assists the operator when dispensing balls into the hopper in flight. To prevent the bag from departing the aircraft, and possibly fouling the tail rotor, a 200-pound strength elastic cord at the bottom attaches to an appropriate point in the helicopter. The elastic cord loop is 21.5-inches long. In addition to the Velcro closure on top of the bag, there is also a drawstring closure, in case the Velcro fails to hold.

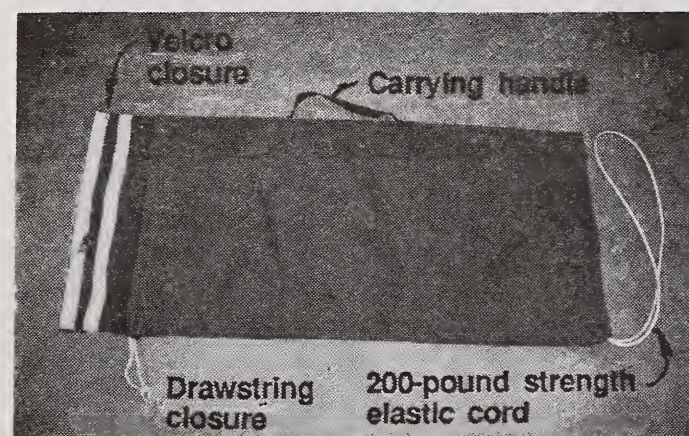


Figure 1. Ping-Pong ball bag.

Ordering Information

The cost per bag is \$25, with no minimum order requirement. Contact:

Scott Smith
Precision Sewn Upholstery and Canvas
4865 Capital Circle Southwest
Tallahassee, FL 32310
Telephone: 904/877-0474 or 904/566-7008.

MOP-UP KIT BAG Background

When water tanks are delivered by helicopter longline in areas of steep terrain, it is necessary to tether the full water bag to prevent it from rolling down the slope. Ground crews use the water tank as a water supply when mopping up fires. State of Montana crews developed a "mop-up kit" bag, which they attach to the Fireflex Fireflyer water tanks (also known as the pyramid tank, the Fireflex, or the blivet) for use in mopping up fires in remote locations. These bags have been in use since 1984.

The cloth bag is sewn onto the pyramid tank so that it cannot be removed except by cutting the stitching with a knife. The service life of a bag attached to a pyramid tank is approximately 2 or 3 years. The pyramid tank and attached mop-up kit bag are delivered by helicopter longline. After the pilot sets down the pyramid tank, the ground crew pulls out the 15-foot tag line, contained in the mop-up kit bag, and secures it to a rock or tree. After the bags are secured and ground personnel clear the area, the pilot releases the pyramid tank from the remote hook.

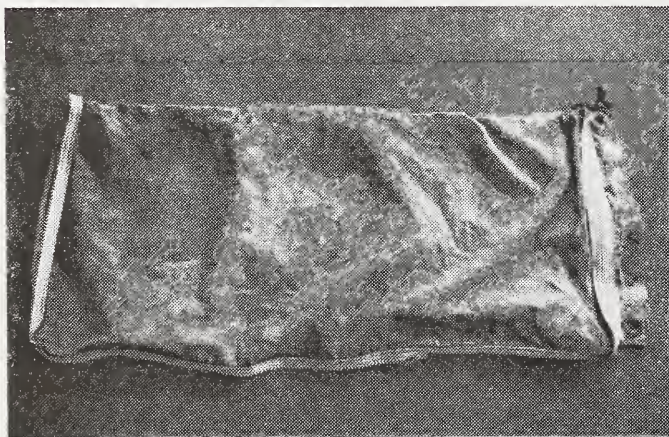


Figure 2. State of Montana mop-up kit bag.

Construction

The mop-up kit bag is made from heavy canvas. This bag is approximately 3-feet long by 16-inches wide, when three sides of the bag are zipped closed with its heavy-duty nylon zipper (fig. 2). The interior of the bag contains four storage compartments (one elongated and narrow; three "square") with Velcro closures (fig. 3).

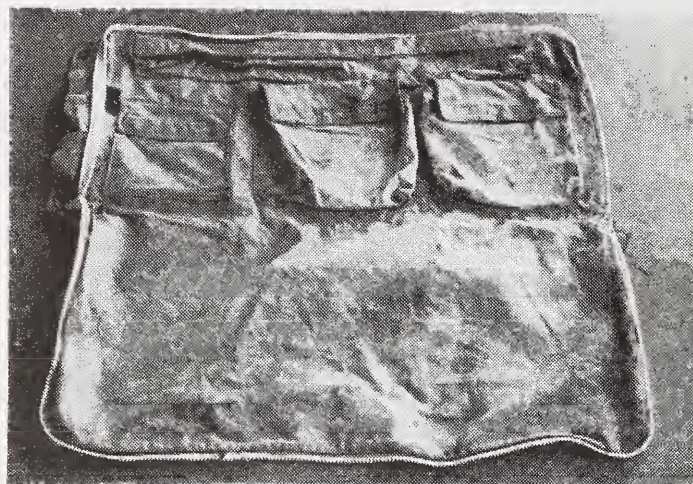


Figure 3. Opened mop-up kit with the four storage pouches visible.

The basic mop-up kit includes the following equipment:

Item	Quantity
Garden hose, synthetic, 50-ft lengths	4 each
Mop-up wand, collapsible, 3-gpm tip	2 each
Shut off, 3/4-in garden hose	2 each
Gated "Y," 3/4-in garden hose	1 each
15 ft of tiedown line	1 each
Component list	1 each

Shoulder and cinch-down straps may be added to the kit, so that the bag can be packed out. Another optional item, available for use with the pyramid tank and mop-up kit, is a Homelite waterbug pump, which is delivered separately by longline. The pump provides approximately 17 gallons per minute, which can be reduced with the provided bypass valve. The pump weighs approximately 6 pounds.

Ordering Information

The State of Montana has the bags made up for approximately \$60 each. Contact:

Paul May, Fire Program Manager
Montana Department of State Lands
Southwest Land Office
1401 27th Avenue
Missoula, MT 59801
Telephone: 406/542-4200.

TETHER LINE BAG Background

Helicopter personnel on the Nez Perce National Forest, ID, have also developed a bag (fig. 4) for use in tethering pyramid tanks that are delivered by helicopter longline. It is used in conjunction with the 72-gallon capacity pyramid, or similar portable water tank. Ground crews use the line in the bag to tether and stabilize the pyramid tank on steep slopes before the helicopter pilot unweights and releases the filled tank. It is delivered by helicopter longline with the pyramid tank, and is attached to the pyramid tank by hooking the locking carabiner on the tether line bag (fig. 5), through the two black nylon straps on top of the pyramid tank. Nylon webbing coiled inside the bag can be played out and tied to a tree or rock to secure the filled pyramid tank in place on the slope. It can be unhooked when the pyramid tank is emptied, and attached to the next full tank when one is delivered.



Figure 4. Tether line bag.

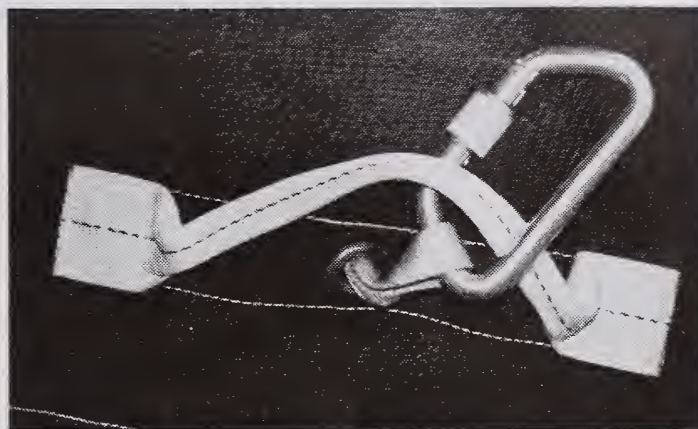


Figure 5. Locking carabiner for securing bag to pyramid water tank.

Construction

The dimensions of the bag are approximately 13 by 13 inches. It is sewn out of heavy nylon pack cloth, with a Delrin zipper across the top, a nylon webbing handle, and a grommet sewn beneath the handle. Tubular webbing stored inside the bag is pulled through the grommet and knotted inside the bag to make a loop. The locking carabiner, which was seen in figure 5, attaches outside the bag to the loop. The bag contains 150 feet of 3/4-inch tubular webbing in a coil (fig. 6). Personnel on the Nez Perce are planning on developing a similar bag that will contain some 3/4-inch hose and other pieces for use as a mop up kit. The new bag will be a different color and specially marked so personnel can easily tell what it contains.

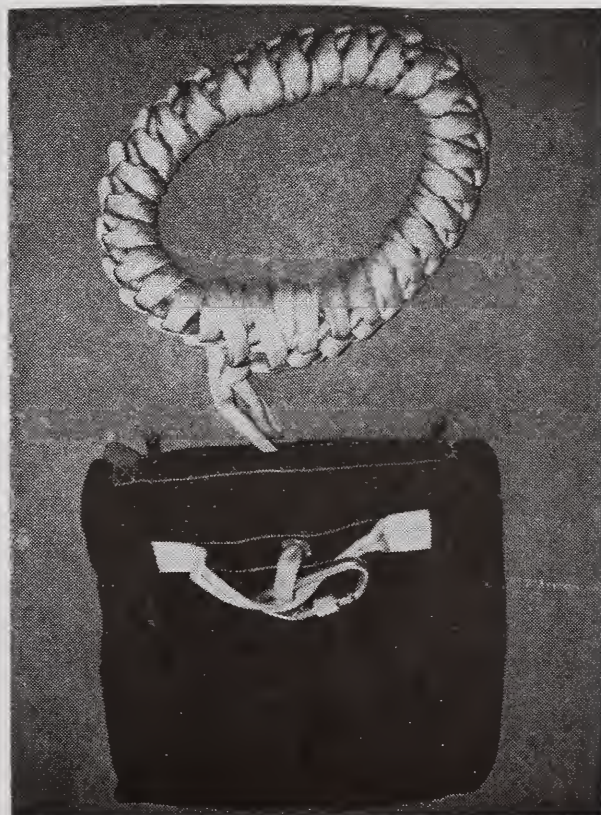


Figure 6. Tubular coiled webbing within tether line bag.

Ordering Information

Approximate cost per tether line bag is \$50 to \$70.

Contact:

Paul Evenson
USDA Forest Service
Box 6, Airport Terminal
Missoula, MT 59802
Telephone: 406/329-4915; FTS: 584-4915.
Agency electronic mail, P.Evenson: R01D

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